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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/050,013 | 01/17/2002 | Oscar Khaselev | Khaselev 1-1-7 | 5586 |

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WONG, EDNA

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

1753

DATE MAILED: 04/03/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|--|-----------------------|---|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/050,013 | KHASELEV ET AL. | |
| | Examiner Edna Wong | Art Unit 1753 | |
| <i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i> | | | |
| Period for Reply | | | |
| A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. | | | |
| <ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). | | | |
| Status | | | |
| 1) <input type="checkbox"/> Responsive to communication(s) filed on ____. | | | |
| 2a) <input type="checkbox"/> This action is FINAL. 2b) <input checked="" type="checkbox"/> This action is non-final. | | | |
| 3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213. | | | |
| Disposition of Claims | | | |
| 4) <input checked="" type="checkbox"/> Claim(s) <u>1-10</u> is/are pending in the application. | | | |
| 4a) Of the above claim(s) ____ is/are withdrawn from consideration. | | | |
| 5) <input type="checkbox"/> Claim(s) ____ is/are allowed. | | | |
| 6) <input checked="" type="checkbox"/> Claim(s) <u>1-10</u> is/are rejected. | | | |
| 7) <input type="checkbox"/> Claim(s) ____ is/are objected to. | | | |
| 8) <input type="checkbox"/> Claim(s) ____ are subject to restriction and/or election requirement. | | | |
| Application Papers | | | |
| 9) <input type="checkbox"/> The specification is objected to by the Examiner. | | | |
| 10) <input type="checkbox"/> The drawing(s) filed on ____ is/are: a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). | | | |
| 11) <input type="checkbox"/> The proposed drawing correction filed on ____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action. | | | |
| 12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner. | | | |
| Priority under 35 U.S.C. §§ 119 and 120 | | | |
| 13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input type="checkbox"/> All b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. ____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. | | | |
| 14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received. | | | |
| 15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121. | | | |
| Attachment(s) | | | |
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ . | |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) | |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . | | 6) <input type="checkbox"/> Other: _____ | |

Claim Objections

Claims **7 and 9** are objected to because of the following informalities:

Claim 7

line 2, the word “polyoxethylene” should be amended to the word --
polyoxyethylene --.

Claim 9

line 2, “1-phenyl-3-parazolidinone” should be amended to -- 1-phenyl-3-
pyrazolidinone --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims **1-7 and 10** are rejected under 35 U.S.C. 102(e) as being anticipated by

Yanada et al (US Patent Application Publication No. 2002/0104763 A1).

Yanada teaches an electroplating bath for plating tin-copper solder coatings comprising:

- (a) a sulfonic acid electrolyte (= methanesulfonic acid) (¶'s [0019] and [0025]);
- (b) a tin compound soluble in the sulfonic acid to form tin sulfonate (= stannous methanesulfonate) (¶ [0016]);
- (c) a copper compound soluble in the sulfonic acid to form a copper sulfonate (= cupric methanesulfonate) (¶ [0017]);
- (d) a non-ionic surfactant (¶'s [0035] and [0036]);
- (e) a satin brightener (¶ [0043]); and
- (f) an antioxidant (¶ [0042]).

The sulfonic acid electrolyte comprises an alkane or alkanol sulfonic containing 1-5 carbon atoms (¶ [0025]).

The sulfonic acid electrolyte comprises methanesulfonic acid (¶ [0025]).

The tin compound comprises tin methanesulfonate (¶ [0025]).

The copper compound comprises copper methanesulfonate (¶ [0017]).

The non-ionic surfactant comprises a polyethylene glycol (¶ [0036]).

The non-ionic surfactant comprises polyoxyethlyene-block-polyoxypropylene with molecular weight between 2000 and 10,000 (= Mw 2500) (¶ [0036] and page 5, Table 1, "Component").

The antioxidant comprises a catechol (¶ [0042]).

Claim Rejections - 35 USC § 103

Claims **8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yanada et al** (US Patent Application Publication No. 2002/0104763 A1) as applied to claims 1-7 and 10 above, and further in view of **Kroll et al.** (US Patent No. 4,981,564).

Yanada is applied above and incorporated herein.

Yanada does not teach wherein the satin brightener comprises an aromatic amine or tertiary amine; and wherein the satin brightener comprises oxidized 1-phenyl-3-parazolidinone.

However, Kroll teaches that oxidation of divalent tin in the electroplating bath is reduced by 1-phenyl-3-pyrazolidinone combined with a dihydrate phenol compound, preferably catechol (col. 4, lines 38-49). The amounts of each antioxidant required are significantly lower than the same reagents used singly to prevent the oxidation of divalent tin (col. 8, lines 52-61).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the electroplating solution of Yanada with wherein the satin brightener comprises an aromatic amine or tertiary amine; and wherein the satin brightener comprises oxidized 1-phenyl-3-parazolidinone because 1-

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phenyl-3-parazolidinone would have prevented the oxidation of divalent tin as taught by Kroll (col. 4, lines 38-49; and col. 8, lines 52-61).

Furthermore, 1-phenyl-3-pyrazolidinone combined with catechol would have not only have reduced the oxidation of divalent tin in the electroplating bath but also would have reduced the amounts of each antioxidant required as taught by Kroll (col. 4, lines 38-49; and col. 8, lines 52-61).

Although Kroll teaches that the additives that are particularly useful in alloy systems such as a tin/lead electroplating bath (col. 1, lines 27-28), the tin/lead electroplating bath is only exemplary and it is suggested by this teaching that other tin alloy electroplating baths would have been also useful, unless proven otherwise.

Although Applicants claim that the aromatic amine, tertiary amine or 1-phenyl-3-parazolidinone is a brightener, the Applicant has a different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

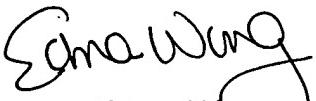
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-

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3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1495.



Edna Wong
Primary Examiner
Art Unit 1753

EW
April 3, 2003